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1976

TREASURE COUNTY CONSERVATION DISTRICT

MONTANA

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LONG RANGE PLAN
for
TOTAL RESOURCE CONSERVATION

NOVEMBER 1976

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

USDA-SCS-PORTLAND, OR 1976

TREASURE COUNTY CONSERVATION DISTRICT

TREASURE COUNTY, MONTANA

LONG RANGE PLAN

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FOREWORD

The Treasure County Conservation District Long Range Plan is a guide to assist the district supervisors and others with the overall development of the natural resources in the county. This program was prepared by the Board of Supervisors, with assistance from various individuals, groups, local, state and federal agencies.

Section I deals with the overall operations of the district program including authorization, history, and responsibilities of the governing body.

Section II includes an inventory of the resources in the district and presents a detailed analysis of the current resource situation.

Section III outlines the policies adopted by the district board. It also outlines the broad objectives, goals and priorities which the district will strive to achieve through the implementation of this program.

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SECTION I

PURPOSE

PURPOSE

A. GENERAL

The Treasure County Conservation District program is a local level plan of assistance to conservation district land occupiers for soil and water conservation and related natural resource uses, based on land capibility. The Conservation District plan serves in part and contributes to:

1. Resource conservation and development planning;
2. Comprehensive land use planning;
3. Environmental, social and economic planning; and
4. Erosion abatement and restoration planning.

THE PLAN INVOLVES:

1. Establishing policy;
2. Inventorying and analyzing the natural resources;
3. Setting goals;
4. Recognizing problems and opportunities for wise use and development;
5. Establishing priorities;
6. Determining objectives;
7. Obtaining and reacting to public involvement;
8. Securing financing, technical and other assistance;
9. Promoting conservation education;
10. Coordinating the implementation efforts of cooperating land occupiers and many resource groups and agencies; and
11. Continuing evaluation and updating to reflect changing situations.

B. PURPOSE

1. Soil Conservation

The primary purpose of the district is preventing soil erosion. In doing this, the distirct necessarily becomes involved in water development, rangeland management, forestry and other related land uses.

Assistance has come primarily from agricultural agencies. It is anticipated that other agencies and programs, such as the Department of Housing and Urban Development, the Environmental Protection Agency and the Federal Revenue Sharing Program may provide more assistance.

Increased public pressures and demands for land as a place to live, work, and play are expanding the District's role. The district has traditionally been oriented toward agriculture, for this is the use to which most land and water is put.

Coupled with this public pressure for a wider diversity of uses is increased demand for a quality environment. Consequently, additional purposes of this program are to plan measures for pollution control and abatement to include ecological considerations in determining the highest and best use of land within it's capabilities, and to choose intelligently among the many competitive uses. The latter purpose involves consideration of the multiple use concept as opposed to single use, plus an evaluation of trends toward public ownership and the various methods of regulations that might be used to effect proper land use. Soil conservation also gives emphasis to enhancement of water quality, natural beauty, and wildlife; preservation of scenic qualities, historic sites, and unique natural areas; and improvement of environmental health, job opportunities and education of the public.

2. Administrative Guide

This plan will serve as an administrative guide for supervisors and is an outline of the means whereby the board of supervisors hopes to coordinate efforts for the orderly management of the natural resources on all land in the district.

3. Reference

This plan will serve as a reference for technicians, private land owners, county commisioners, land use planners, community planners, researchers, educators, and others working with the district, particularly those agencies that require a distirct program to follow as provided in Memoranda of Understanding or other appropriate agreements.

4. Annual Work Plan

This plan will serve as a basis for developing the Annual Plan of District Operations.

5. Information

This plan will serve as the basis for an information program. Information will be directed to the public, cooperators, land owners-managers-occupiers-developers, legislators, county commissioners, conservation agencies and organizations, schools, churches, libraries and planning and development agencies.

6. Problems and Opportunities

The district plan identifies the conservation problems and opportunities recognized by supervisors, cooperating agencies and advisory groups and outlines measures to correct the problems and/or develop wise management of natural resources. This program attempts to give a history of the district, to explain and evaluate the present condition of the natural resources (soil, water, vegetation and wildlife) the opportunities that exist to protect and develop these resources, and the policies, goals and objectives, and working procedures of the supervisors. This plan gives consideration to all private and public lands.

C. JURISDICTION

1. Private Lands

Basically the distict program has jurisdiction in the private ownership land area and deals with water, soil and related resources. It has, as overall objectives, the treatment of each acre according to the needs and use of each acre within its capabilities.

2. Public Lands

Mutual problems and opportunities for the conservation, development and use of public lands are intended to be correlated with the public land administrators, mangers and users.

D. METHOD

Land occupiers voluntarily sign cooperative agreements and agree to develop and carry out a conservation plan with such help and assistance as may be provided by the district and other agencies working through the District. There are also provisions in the Conservation Distirct law to develop land use regulations and sediment control.

E. AUTHORIZATION

The district program is authorized under the provisions of Montana Conservation Districts Law 76-101 to 76-117 and 76-201 to 76-233, Revised Codes of Montana as amended, particularly Section 76-198(8) and is required as part of Memorandum of Understanding or other appropriate agreements the district has and is authorized to cooperate and receive assistance from:

U.S. Department of Agriculture
Soil Conservation Service
Agricultural Stabilization & Conservation Service
U.S. Department of Interior
Montana Department of Natural Resources and Conservation dated April 1974.
Montana Department of State Lands dated February 1970.
U.S. Army Corp of Engineers dated September 1976.

Informal working relations have been established or are desired for cooperation and assistance from the following:

1. Federal Government

a. U. S. Department of Agriculture
   (1) Farmers Home Adminsitration
   (2) Agricultural Research Service

b. U. S. Department of Interior
   (1) Bureau of Outdoor Recreation
   (2) Bureau of Reclamation
   (3) Bureau of Sport Fisheries & Wildlife

c. U. S. Department of Health, Education and Welfare

2. State Government

   a. Montana Highway Department
   b. Montana Environmental Quality Council
   c. Montana Department of Intergovernmental Relations
   d. Montana Department of Health & Environmental Science
   e. Montana Extension Service
   f. Montana Department of Fish & Game
   g. Montana Department of Agriculture

3. Local Government

   a. County Commissioners
   b. Jordan City Council
   c. City-County Planning Boards
   d. Superintendent of School & School Districts.

4. Non-Governmental

   Informal working relations have been established or are desired with associations having resource interests such as development groups, banks, churches, youth groups, civic groups, and etc.

Other major laws which relate to the district program are:

a. P. L. 46, Soil Conservation and Domestic Allotment Act of 1936. (USDA Secretary's Memorandum No. 1488 of February 1, 1962);

b. P. L. 566, Watershed Protection and Flood Prevention Act of 1954;

c. P. L. 87-703, Section 102 of the Food and Agriculture Act of 1962, Resource Conservation and development program;

d. P. L. 91-190, National Environmental Policy, January 1, 1970;

e. P. L. 92-500, Federal Water Pollution Control Act of 1972;

f. P. L. 92-419, Rural Development Act of 1972;

g. P. L. 93-86, Title X, Agriculture and Consumer Act of 1973;

h. Water Quality Rules and Regulations of Department of Health and Environmental Sciences;

i. Floodplain Rules and Regulations of Montana Department of Natural Resources and Conservation;

j. Subdivision Regulations of the Montana Department of Community Affairs and County Commissioners.

k. Montana Water Use Act of 1973.

l. Montana Strip Mining & Reclamation Act of 1973.

m. Open Cut Mining Act of 1973.

n. Natural Streambed and Land Preservation Act of 1975.

o. Renewable Resources Development Act of 1975.

F. ORGANIZATION, LOCATION AND ACREAGE

The Treasure Conservation District was organized in 1946 and includes the whole county, including the town of Hysham.

Conservation Districts are organized by local residents who petition, hold a referendum and vote to form a distirct. A board consists of a minimum of five elected members. Incorporated towns or cities may vote to join conservation districts and may appoint two mwmbers. Associate members can be appointed as needs arise and if persons desire to assist and participate or get involved in special conservation projects. One member of the conservation district board, also serves on the county plannning board where it exists.

Distircts, under Memorandums of Understanding with the United States Department of Agriculture, request technical assistance from the Soil Conservation Service and offices are set up to provide services; ie; conservation planning, range surveys, soil surveys, engineering surveys and special services and inventories in biology, geology, woodland management, agronomy and special plant materials. Other projects possible within a Conservation District may include watersheds, resource conservation and development distircts, saline seep studies, river basin studies, flood hazard analysis studies, Great Plains Conservation Program and others.

Conservation Districts have the responsibility to conduct the overall conservation program in their area, determine needs, set priorities of work and policies of action. Districts operate on a strictly voluntary basis and only work with those land owners, lease holders, and other land users, such as groups wanting to solve a common problem, units of government and individuals who request services through a cooperative agreement with the Conservation District. Other land users can be mining companies, ie.,

coal, bentonite, sand and gravel, railroads, highway departments, school districts, state parks, prison farms, national wildlife refuges, etc.

Other agencies of State and Federal Government who work closely with the Conservation Distirct includes Montana Fish and Game Department, Montana Department of Natural Resource and Conservation, Montana Department of Lands and Investments, Montana Department of Forestry, U. S. Forest Service, Agricultural Stabilization and Conservation Service, Farmers Home Administration, Cooperative Extension Service and Bureau of Indian Affairs.

The cost-sharing concept, whereby the Federal Government pays a portion of the conservation job, was developed many years ago by Congress during the dust bowl days of the "30's", because it was felt that the public welfare was best served if these conservation measures were speeded up and participated in by all citizens. All persons, rural and urban, will benefit from any conservation practices applied to our basic resources of land and water.

The Great Plains Conservation Program is operative in the Treasure Conservation District. This is a conseravtion plan and long term cost-sharing agreement between the land user and the Soil Conservation Service, to so agreed upon practices of a conservation nature over an extended period of time, (3-10 yrs.). In Treasure County there are four contracts. This program started in 1958.

The ACP, Agricultural Conservation Program, is available to land users on an annual basis and is available through the Agricultural Stabilization and Conservation Service, USDA. Practices approved by a farmer-rancher elected committee, and meeting practice specifications, are eligible for cost-sharing funds assistance. In most cases this amounts to about 50% of actual cost.

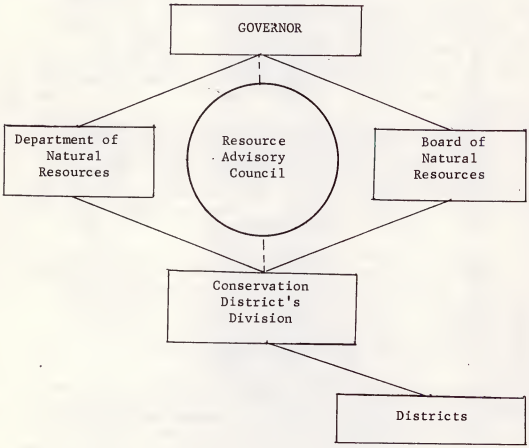
The public land management agencies, such as the Bureau of Land Management, State Department of Lands and others, have the responsibility for the planning and management of their lands under laws and policies set forth in congress and the State legislature. Their activities include total resource management through the multiple-use concept to include benefits for grazing of domestic animals, wildlife, timber, recreation, watershed, aethetic values and many other needs!

G. RESPONSIBILITIES

The supervisors are elected by qualified electors within the district. They form the governing body of the conservation district, with broad authority as outlined in the Conservation Districts Law to develop and carry out a resource conservation and development program. The Montana Department of Natural Resources and Conservation and District Supervisors can request state and county funds for the operation of the district.

H. DISTRICT RELATIONSHIP TO STATE GOVERNMENT

(See chart below)



SECTION II

RESOURCE INVENTORIES

CLIMATE

The climate varies considerable within Treasure County. The variation in climate effects the soils, range site, woodland production and, of course, dry cropland areas.

Because of the average precipitation levels, most dry cropland is being farmed on a fallow crop rotation or a crop-crop fallow rotation. Winter wheat, spring wheat and barley are the main grains grown. To date saline seep is not a problem in the county. Summer fallow is a recommended moisture conservation practice.

Range sites vary from shales and saline uplands and other low producing sites north of the river, to high producing silty and sandy sites primarily south of the river and in the 15-19" zones.

Frost-free periods, or growing seasons, vary in one area from a low of 90 days at the highest elevations, to 135 plus days along the Yellowstone River.

Snowfall varies pretty much as the county precipitation averages do, the highest snowfall areas being at higher elevations where annual precipitation is also higher.

We live in a climate subject to rapid changes, with blizzards, hail, high winds, snow, gully washers and droughts, all part of the average! Like one old native said when warned of an apparent storm approaching, "Let it come, we were here first!"

Generally our climate has seemed to follow a pattern, such as; dirty and dry 30's, wet 40's, dry 50's, wet 60's and above average in the 70's.

Currently the High Plains Experiment is in progress at the Miles City Airport. The primary purpose of this project is an attempt to increase precipitation through a process of cloud seeding over a wide area. It is expected to cover an area of 70 miles radius of Miles City. Dr. Arlin Super, a faculty member of Montana State University, is director of the project and emphasis is placed on cumulus clouds during initial phases of the experiment. The first coulds are expected to be seeded sometime during 1976. This project is financed by the Bureau of Reclmation.

Areas in North and South Dakota have been working with weather modification procedures for several years. Working carefully and with only certain kinds of clouds, moisture and temperature conditions, they have been increasing effective moisture availability during the growing season by 10-15%. This can mean from ½ to 1 inch difference per season in this area.

The primary source of climate data is the National Weather Service of the National Oceanic and Atmospheric Administration. This northern edge of the Great Plains states is considered a sem-arid region. Data from the Forsyth observation or reporting station was furnished by the weather service office in Billings for reference purposes.

Average temperature, precipitation and solar radiation (S.R.)

	Jan.	Feb.	March	April	May	June
Temp.	17.3	23.9	31.4	45.5	55.9	63.9
Pre.	.28	.31	.50	1.40	1.90	2.95
S.R.	151	270	380	465	570	635

	July	Aug.	Sept.	Oct.	Nov.	Dec.
Temp.	73.1	71.1	59.6	48.6	33.4	23.3
Pre.	1.33	1.15	1.06	.70	.48	.35
S.R.	640	535	420	290	180	125

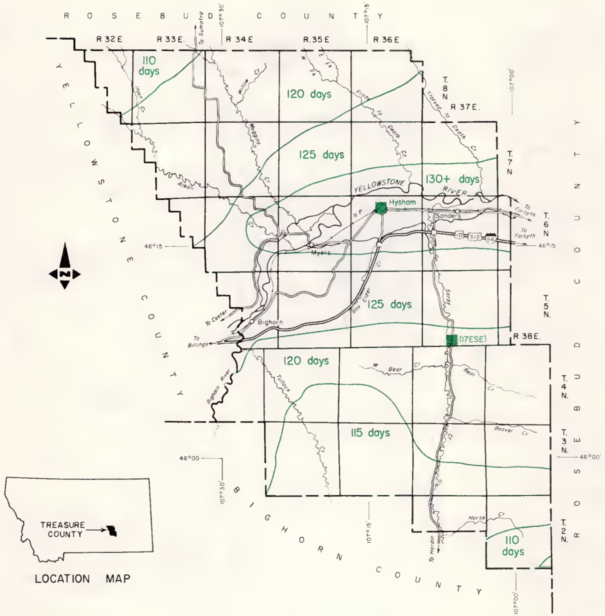
1. Average annual temperature 45.6 (1941-1970)

2. Average annual precipitation 12.40 (1941-1970)

3. Average annual solar radiation 390 (1972-1974) *langlies

Detailed studies now being conducted in the Colstrip area will provide useful planning information relating to atmospheric conditions and quality of air management.

* Unit of measure to denote one gram calorie per square centimeter; or the intensity of the sun for a particular time period. (Huntley observing station)



LOCATION	AVG. PRECIP.	YEARS
Hysham	12.54	31
Hysham (17ESE)	13.82	16

(Averages through 1975)

■ Reporting Stations

FROSTFREE & PRECIPITATION

TREASURE COUNTY, MONTANA

NOVEMBER 1976

5 0 5 10 MILES

SCALE 1:500,000

Source:
Base map prepared by SCS, Portland Carto Unit from AMS 1:250,000 series.
Thematic deta'l compiled by Montana State Staff.
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE USDA SCS PORTLAND, OR 1976

M7-OL-23451-6

LAND OWNERSHIP

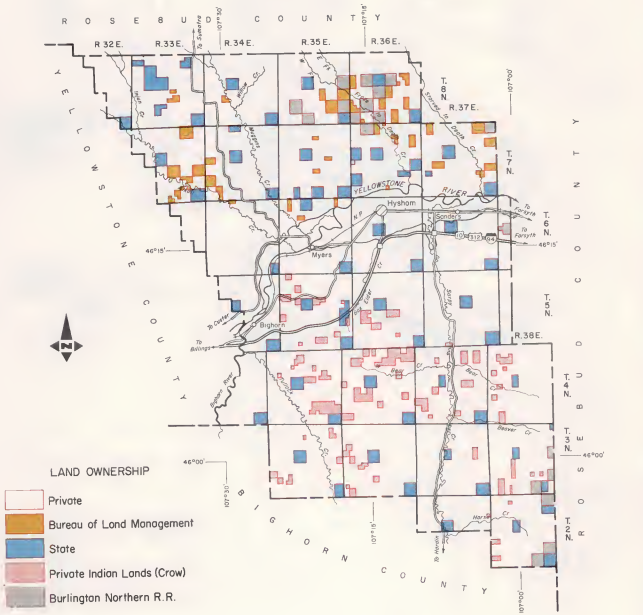
The Treasure County Conservation District comprizes a land area of 629,760 acres. The approximate ownership is as follows:

	Acres	% of Total
Private	580,703	91
State of Montana	37,364	6
Federal	11,694	3

The Federal land within the Treasure County borders only accounts for 3% of the land area of the county. These lands are normally found in relative small tract.

The private land include 15,106 acres of Crow Indian deeded lands. These are scatter tracts throughout the county and outside the boundaries of the reservation.

State lands are generally located in section 16 and 36 of each township. These lands are leased to private operators generally located nearby. Lease periods are for 10 years.



LOCATION MAP

LAND OWNERSHIP

TREASURE COUNTY, MONTANA

MAY 1975

5 0 5 10 MILES

SCALE 1:500,000

TRANSVERSE MERCATOR PROJECTION

SOURCE MATERIAL: AMS TOPOGS NL13-4, NL13-7

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

M7-OL-2345I-2

COMMUNITY PLANNING

BASIC STATISTICS

Background data on Treasure County, as to land area and major land classifications, shows that the county is composed of mainly agricultural lands. Rangeland in Treasure County constitutes approximately 91 percent of its 629,760 acres. There are 15,106 acres of Crow Indian deeded lands.

The land area in Treasure County classified as to major land uses is as follows:

	Treasure
Irrigated Cropland	18,142 A.
Non-irrigated Cropland	22,967 A.
Grazing Land	596,591 A.
Woodlands	2,871 A.

There are 99 farms in Treasure County, of which 56 are irrigated farms. Lands for other uses i.e.; mining, industrial, residential, highways, water areas, etc., number about 5700 acres in Treasure County.

The total farms in the county are farms on which the sales in 1974 exceeded $2500, except for farms of 10 acres or less if they sold at least $250 of farm produce during the year. Of the farms in Treasure County almost 100 percent of them are in the 10 acre and over classification, with less than 18 percent in farms under 200 acres.

The taxable valuation in 1974 of properties in Treasure County was $3,480,129.

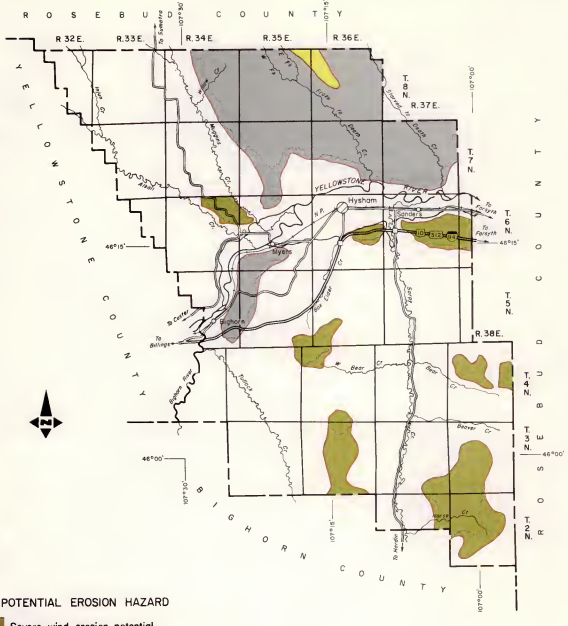
SOILS

Treasure County consists primarily of sedimentary plains deeply dissected by erosion processes. Cuts or dissected faces indicate erosion has cut through sandstones, siltstones, and shales. Soils were developed from these materials and therefore range in texture from fine sand to clay and shale. The landscapes on the uplands range from gently sloping to steep.

Soil associations generally describing the soils gather the soils into broad groups as follows:

a. Soils of the flood plains-alluvial
b. Soils of the sandstone and shale uplands sedimentary
c. Soils of the red shale hills-sedimentary
d. Soils of the high terraces-alluvial

See the enclosed Soils Association map for Treasure County. This map is for broad based planning only. Treasure County has a published soil survey, copies of which are available upon request.



POTENTIAL EROSION HAZARD

- Severe wind erosion potential
- Severe water erosion potential
- Severe wind and water erosion potential

LOCATION MAP

POTENTIAL EROSION HAZARD

TREASURE COUNTY, MONTANA

SEPTEMBER 1976

5 0 5 10 MILES

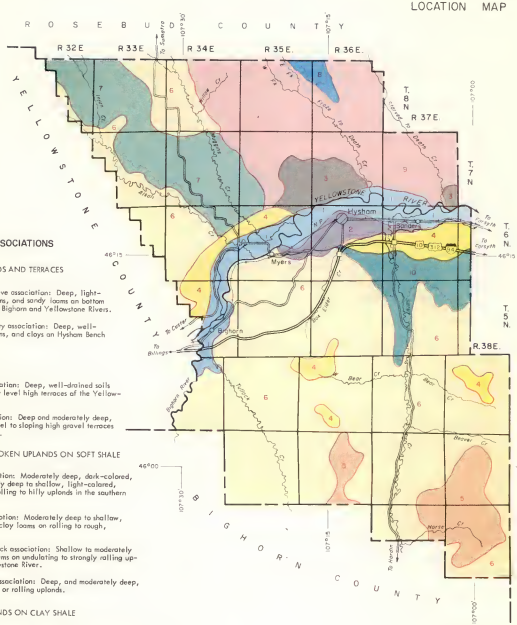
SCALE 1:500,000

Source:
Base map prepared by SCS, Portland Cartographic Unit from AMS 1:250,000 series.
Thematic detail compiled by Montana State Staff.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE USDA-SCS-PORTLAND, OR 1978

M7-OL-2345I-9

LOCATION MAP



SOIL ASSOCIATIONS

SOILS OF IRRIGATED BOTTOM LANDS AND TERRACES

Havre-Lohmiller-Glendive association: Deep, light-colored loams, clay loams, and sandy loams on bottom lands and fans along the Bighorn and Yellowstone Rivers.

Nunn-Fort Collins-Cherry association: Deep, well-drained loams, clay loams, and clays on Hysham Bench and adjacent fans.

SOILS OF HIGH TERRACES

Gilt Edge-Arvada association: Deep, well-drained soils with a claypan on nearly level high terraces of the Yellowstone River.

Wanetta-Hesper association: Deep and moderately deep, loamy soils on nearly level to sloping high gravel terraces of the Yellowstone River.

SOILS OF ROLLING TO ROUGH, BROKEN UPLANDS ON SOFT SHALE

Flasher-Bainville association: Moderately deep, dark-colored, sandy soils and moderately deep to shallow, light-colored, loamy soils on strongly rolling to hilly uplands in the southern part of the county.

Bainville-Midway association: Moderately deep to shallow, light-colored loams and clay loams on rolling to rough, broken uplands.

Bainville-Cushman-Tullock association: Shallow to moderately deep loams and sandy loams on undulating to strongly rolling uplands north of the Yellowstone River.

Terry-Treasure-Tullock association: Deep, and moderately deep, sandy soils on undulating or rolling uplands.

SOILS OF ROLLING TO HILLY UPLANDS ON CLAY SHALE

Marias-Pierre-Haven association: Deep and moderately deep, saline-alkali and saline clays on fans, terraces, and uplands north of the Yellowstone River.

Pierre-Lismas association: Moderately deep and shallow, granular clays on shale uplands south of the Yellowstone River.

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

GENERAL SOIL MAP

TREASURE COUNTY, MONTANA

OCTOBER 1976

5 0 5 10 MILES

SCALE 1:500,000

TRANSVERSE MERCATOR PROJECTION

SOURCE MATERIAL AMS TOPOGS NL 13-4, NL 13-7

Source:
Base map prepared by SCS, Portland Carto Unit from AMS 1:250,000 series.
Thematic detail compiled by Montana State Staff.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

M7-OL-2345l-7

Sugar Beets

Sugarbeets continue to be a major crop produced in Treasure County and continues to lead in net return per acre. However, there is some risk involved in the production of sugarbeets and they do require a substantial amount of operating capital and equipment when comparing them with some other crops produced in the area. Weather conditions in eastern Montana seem to be very favorable for sugarbeets, and a number of the permanent farming community remain faithful to sugarbeet production. The five year average (1970-1974) in Treasure County was 22.2 tons per acre. Yield trials in Hysham in 1971 averaged 28.08 tons per acre.

Pinto Beans

Beans are somewhat a newcomer in the county, but interest in their production is on the upswing. In 1974 there were 1,117 acres in Treasure County.

Major crops & acreages-1974	Treasure
Wheat	4,448
Barley	2,492
Oats	454
Speltz	None
Corn	3,827
Beans	1,117
Sugarbeets	3,444

2. Livestock

The livestock industry ranks number one in cash receipts from agriculture products, in both counties, with cattle being of primary importance.

In 1974 Treasure County had an estimated 36,900 head of cattle with approximately 17,200 having calves and an expected salable calf crop of approximately 14,700 head. This is based on an 85% calf crop.

Most calves are born during March and April and marketed in October and November as feeder calves weighing about 450 pounds. A large majority are shipped to feeders in the Midwest; however, there has been an increase in cattle feeding in this area due to a large feed base and abundant supply of calves.

The normal winter feeding period runs from December through April and cows and calves are summered on native range during the summer months. Generally, the winters are mild and many operators north of the river feed very little hay, grazing on winter range and feeding supplement. Most operators in the southern part of the county must feed more hay because of the heavier snowfall.

Hog numbers seem to remain fairly constant with 1,900 head in Treasure County during 1974. With good supply of feed barley in the area and short supply of hogs in Montana this could be a profitable enterprise.

Sheep and hog production represent a lot of work and not as much glory as cattle production.

Horse numbers seem to be on the increase with an estimated population of 600 head in Treasure County.

Livestock feeding has been on the increase in the county. However, presently there is a slump in the industry due to low cattle prices.

Increased acreage of forage and feed crops, along with favorable cattle prices in the past has stimulated the cattle feeding industry causing growth and development of feedlots. In three commercial feedlots, operated as part of the ranch enterprise, cattle are fed on a year-round basis. Also, there are numerous small farm and ranch lots where livestock producers primarily feed their own livestock during the winter.

Primary rations include corn grain, corn silage, barley, alfalfa silage and alfalfa hay. Some cattle are also fed on beet tops in the fall.

With approximately 13,000-15,000 feeder cattle available each fall, and a good supply of feed in the local area, there is a good potential for cattle feeding in the counties.

3. Weeds

Six species of weeds have been declared noxious by the County Commissioners in Treasure County. These include Canadian Thistle, Russian Knapweed, Whitetop, Leafy Spurge, Spotted Knapweed and Morning Glory. Primary weed infestations are from Canadian Thistle, Leafy Spurge, and Morning Glory.

Highways, county roads, railroads, the Yellowstone River and main tributary drainages represent the areas of primary noxious weed infestations. Native rangeland, dry cropland and irrigated cropland also are infested with noxious weeds. It is believed that many of the infestations developed as a result of weed seed transfer, via irrigation water, livestock feed (hay and grain), migratory animals and winds.

Treasure County has a board to supervise the control program. County weed boards, chemical companies, USDA agencies, landowners and research workers are attempting to coordinate control and educational programs commensurate with the Montana Weed Law and for the benefit of all the people.

LOCATION MAP

LAND USE

TREASURE COUNTY, MONTANA

JUNE 1975

5 0 5 10 MILES

SCALE 1:500,000

TRANSVERSE MERCATOR PROJECTION

SOURCE MATERIAL AMS TOPOGS NL13-4, NL13-7

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

M7-OL-23451-4

THE FARM
CONSERVATION PLAN
YOUR LAND

RANGELAND AND GRAZING WOODLAND RESOURCE

The total acreage of Treasure County is approximately 630,538 acres. Eighty-five percent of these acres or (555,948 acres) is rangeland, six to seven percent being grazed woodlands. These lands help provide our clean air, water supply, home and food for nearly all our wildlife, and most of the feed for our domestic livestock. Other benefits which are hard to put price tags on are aesthetic values and natural beauty for photography, sightseeing, rock-hounding, camping, picnicing, hiking, horseback riding, snowmobiling and hunting to name a few.

About 50% of our rangeland needs better management to increase production and do a better job of giving us clean air, clean water, and more food for wildlife and domestic animals.

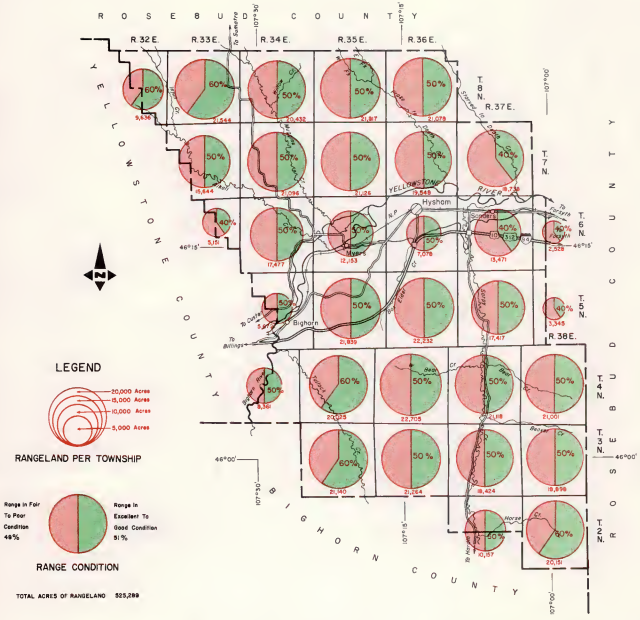
Improving our rangeland just one condition class could amount to an economic effect of more than $600,000 annually for our county.

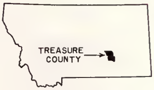
The ownership pattern in Treasure County is 92% privately owned and about 5.5% is State owned land and less than 2% is Federal land. The balance of acreage is roads, urban built-up areas and small water areas. Since such a large percent of our land is owned and controlled by private interest, they are responsible for improving and conserving this most important resource. Until they are convinced that proven management and structural practices are more economical than past practices, improvement in forage production will lag.

Major practices which will increase forage production and pounds of red meat sold are; livestock water developments (dams, enlargements, pits, springs, wells and pipelines), waterspreading on rangeland, contour furrowing, brush and weed control, deferred and rotation grazing systems, fencing for proper control and management, reseeding of ranges to speed recover, etc.

The 42nd Legislative Assembly approved, by joint resolution, the Montana Rangeland Resource Program. Some of the goals set for completion by 1980 are: 80% of the rangeland under intensive management, 50% of the range in excellent condition and 30% in good condition, with a 40% increase in useable forage! Stockwater potential; 80% developed, with the balance being improved. Local Range Resource Program Committees have been formed and are trying to focus the attention of all citizens on the value of our rangeland resource, tell how it can be improved, "show me" tours to demonstrate how ranchers have increased production and caused the costs of management to decrease per animal unit.

Improved wildlife habitat will result when native ranges are improved for other uses. Other prime benefits will be a reduction of soil erosion; the pollution of our streams, resulting in less maintenance and cost to city water supply systems; less flood damage, higher quality and stabilized water supplies, and cleaner air.





LOCATION MAP

RANGE RESOURCE

TREASURE COUNTY, MONTANA

MAY 1975

5 0 5 10 MILES

SCALE 1:500,000

TRANSVERSE MERCATOR PROJECTION
SOURCE MATERIAL · AMS TOPOGS NL 13-4, NL 13-7

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

M7-OL-23451-1

TIMBER

The private woodland resource in Treasure County area consists primarily of two forest tree species; ponderosa pine and plains cottonwood. It must be noted that no extensive inventory of the private commercial forest lands in this area has ever been completed. But in 1969, an aerial photographic analysis by Forest Service, BIA, and SCS indicated the following: in Treasure County there is an estimated 28,344 acres of commercially recoverable timber on privately owned and State owned land. The volume of potentially harvestable woodland is 32,750 million board feet.

Much of this commercial timber which was once thought to be worthless in the eyes of the rancher is now considered another valuable crop. Just as any other crop, however, this is a crop which needs to be managed to obtain optimum returns. Currently in Montana the forest lands locate in private ownerships are producing about one-half of the total volume of timber they could produce if managed. Private woodlands inventories and conservation plans are available on request from the Office of the State Forester.

Cottonwood, in many cases, in the area is purchased on a per acre basis versus a thousand board feet basis for ponderosa pine. Cottonwood volume on a per acre basis varies from approximately 5,000 BF per acre to 25,000 BF per acre. This cottonwood has sold from $1.00 to $10.00 per MBF. There is a controversy concerning the cutting of cottonwood along the Yellowstone River. Many feel that if done, it would contribute to the further erosion of the Yellowstone River banks and thus take additional prime farmland out of production. Also, wildlife values are key considerations to be evaluated.

At present there are approximately 15 sawmills operating in or near the Rosebud-Treasure area which have shown strong interest in the private timber in this area. Any of these sawmills or logging contractors could economically operate in the Rosebud-Treasure area. This affords every individual with forested lands in the county the opportunity to practice forest management.

In the past year several ranchers in the southern part of the county have executed timber contract leases. It is not known for sure at this time if the lumber firms will cut in the near future or not.

WATER RESOURCES

The primary perennial streams of major importance to Treasure County include the Yellowstone, Big Horn, Sarpy and Tullock Creeks. These are very important sources of water for agriculture, recreation, industry, municipal and wildlife.

Basic Water Resource Data:

1 acre = 43,560 sq. ft.; 1 acre foot = 43,560 cubic ft.
1 acre ft. = 325,900 gallons (A.F. covers 1 acre 1 ft. deep)
1 cubic ft. per sec. (cfs) = 449 gal. per min.
1 cfs = 40 Montana statutory miner's inches
1 cfs = 646,272 gallons per day
1 cfs for 1 year = 724 acre feet

Annual flow data of these sources: 1/

Stream	Maximum	Minimum	Avg. Annual Runoff-A.F.
Yellowstone			
@ Billings	7,396,000	2,915,000	4,893,000
@ Miles City	12,000,000	4,446,000	8,151,000
@ Sidney	18,420,000	4,260,000	9,353,000
Big Horn			
@ Big Horn	3,983,000	1,175,000	2,721,000

Water for Irrigation

There are approximately 810 acres under irrigation utilizing the pivot sprinkler system in the two counties. Individual pump sites and small scale diversion systems account for a sizable acreage of crops receiving supplemental water for production purposes.

1/ USGS

Average water requirements for major crops in our area; (Loam soils, deep, with good permeability and water holding capacity.)*

Crop	Avg. No. of Irrig.	Total consumptive use	% eff.	A.F. **per yr./ac.	Avg. Yields
Sugarbeets	5-6	30"	70	2.5	18-23 Ton
Beans	3-4	18"	70	1.5	18-20 100# Sacks
Alfalfa	2-3	30"	70	2.5	3-5 Ton
Corn, Silage	4-5	24"	70	2.0	20-25 Ton
or Grain	4-5	24"	70	2.2	90-120 Bu.
Grain (Barley, Wheat, Oats)	4-5	20"	70	2.2	50-70 Bu.

** Assuming Haverson, loam soils, good management, timely planting, weed control and adequate fertilizer program (Slopes 1.5-3%). Border, furrow and sprinkler systems.

* A.F. (Acre Feet of Water)

Irrigated Acreage Now

Treasure- 19,000 acres x 2.3 A.F./yr. = 43,700 A.F. Water/yr.

TOTAL 115,100 A.F. Water/yr.

Potential Added Irrigation (Est.)

Gravity, Sprinkler and Dams

Treasure- 9,100 acres x 2.3 A.F./yr. = 20,930 A.F./yr.

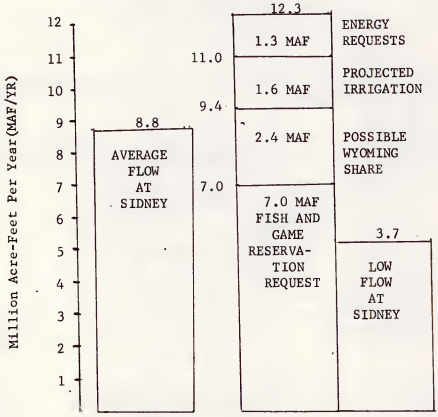
TOTAL 68,096 A.F. Water/yr.

Following is a brief of the existing major irrigation projects in Treasure County.

Name of Project	Water Source	Acres Under Irr.	Water Tax (Per Acre)
Box Elder Ditch	Y.I.D.	1200	$5.00
Hysham Water Users	"	5400	$9.75
Yellowstone Irr. District	Yellowstone	11,000	$4.50
Larger pump with-drawals (Sprinklers, and Gravity)	Yellowstone	4500	--

The following graph alludes to a number of problems when attempting to allocate water for all purposes from one of our major drainage basins. Relatively little water is being utilized by industry at the present time for conversion plants. Off stream storage is being considered for many locations to supplement periods of low flow. Some studies reveal that water for agricultural purposes will become critical under extreme situations during the growing season when demands for water by crops are greatest.

Figure 1- Flow at Sidney with possible future water requirements by year 2000



Industrial Uses

The Montana Power Company has filed for and received a permit to withdraw water from the Yellowstone River. Their request granted was for 20 cubic ft./sec. or 9000 gal./min. A pump plant and pipeline was constructed in 1974 to transmit this water to Colstrip to be used for several purposes; 1. Steam generation plants 1 and 2; 2. Cooling tower systems; 3. Town of Colstrip water supplies; 4. Possibly in the future some recreation and fishing use can be made of it at the surge pond.

Water requirements for steam electric (coal-fired) generating plants. 2/

Cooling System	Depletion
Evaporating Cooling	15,000 AF/yr./1000 MW Unit
Pond	10,000 " "
Dry Cooling	2,000 " "
Once Through	3,600 " "

Water Rights

Issues relating to water and the declaration of certain rights is becoming a more complex area of understanding with time. Generally, it has always been recognized (since 1889) that water in Montana is a property of the state, therefore any individual or group must acquire a right through appropriation from the state.

At this time, five major water rights issues defy quantification. They are; Existing Water Rights, Indian Water Rights, Federal Water Rights, Existing Water Rights Litigation, and Yellowstone River Compact.

The Montana Water Use Act of 1973 provides a permit system, court adjudication and a centralized record keeping system. Field work is now being pursued by Department of Natural Resources in validating existing rights.

Only the future will reveal the Indian and Federal rights to water now being challenged through court proceedings. Water for industrial purposes is also facing the test of recent legislation with a number of cases pending.

Perhaps of greatest interest relating to the water rights issue is the Yellowstone River Compact which was designed to allocate water of the Clarks Fork, Yellowstone, Tongue, Powder, and Big Horn River's.

2/ Western States Water Council, Nov. 1974

The compact recognized rights prior to 1950 and divides the remaining water as follows:

	Wyoming	Montana
Clarks Fork-Yellowstone	60%	40%
Big Horn	80%	20%
Tongue	40%	60%
Powder River	42%	58%

Surface Waters

Snow melt and rainstroms provide the water necessary to fill dams, pits and waterspreading systems. Many acres or rangeland depend on ponds for stockwater, primarily in the shale areas which have no well possibilities. Large silt loads are carried by these runoff waters in the shale and dense clay areas. The life expectancy of many ponds is as low as 8-10 years.

In the past 5-6 years more pit excavations have been made and they solve many of the above problems. They require only small areas of runoff to fill (30-100 ac.); therefore, reducing the silt buildups. The surface areas are smaller, thus evaporation is lessened and the water stays cooler. Pits are deeper, with steep sides, no weeds, and cattle do not walk out into them. They can be placed in any soil which will hold water without the need of worrying about spillway problems, trickle pipes, etc.

In the area of Treasure County which lies in silty and sand formations, it is difficult to find dam sites to hold water for a sufficient length of time to be economical. Lining dams with bentonite has been done and proved effective, if done properly. There are several dams in the county which exceed 50 acre feet of storage. An inventory of these has been made and is on file in the Soil Conservation Office.

Many ponds, of course, serve multiple purposes, i.e.; stockwater, fish habitat, waterfowl habitat, muskrat homes,etc.

Waterspreading systems are a system of contour dikes spaced at proper intervals on smooth slopes using runoff water to increase production of grasses and hay. Usually about 1-1.5 ft. of water is held back behind the dike long enough for the water to thaw the frost out (if runoff is in the spring) and soak up the soil profile.

It is not uncommon on good soils and controlled systems to get yields of 2-4 tons of hay/ac. Regarding native grasses versus tame or introduced species, annual mowing is not recommended. Western wheatgrass, the mainstay, cannot stand close mowing each year and still produce an economical yield. Waterspreading systems can provide ranchers with extra hay and pasture in areas where hay is marginal or has to be purchased.

Underground Water

The geological formation in Treasure County indicates the following: Shallow stockwater wells (20-350 feet) are feasible in nearly all areas (except the northeast portion of Treasure County), this area being primarily Bearpaw Shale, Colorado Shale, Claggett and Judith River Formations. Within these areas there are some small areas such as the Fox Hills Sandstones, Hell Creek and Lebo formations which will produce small quantities of water, either as wells or springs (3-10 gallons per minute). Underlying the Bearpaw Shales there are deep waterbearing sandstones such as the Judith River, Eagle, Cat Creek, etc., which have artesian pressure, are hot, and have high contents of minerals and nitrogen gases. Livestock drink these waters but they are expensive and require special development techniques.

In the Fort Union formation there are many coal seams of varying thickness and these are nearly always reliable, quality water aquifers. Wells and/or spring developments are feasible in this area.

With the availability of electrical power, a good quality well, plastic pipe and fixtures, water is being piped many miles to areas previously dry or served at best with muddy reservoirs. Livestock do much better on clean water, and when once installed properly, the pipelines are nearly maintenance free.

Sufficient quality underground water for irrigation is not available. The aquifers which contain satisfactroy quality waters cannot produce quantities large enough to irrigate with.

1. Coal

Mapping and exploration since 1900 in Eastern Montana reflects deposits of over 200 billion tons of lignite and subbituminous coal. Approximately 45 billion are considered strippable (where overburden does not exceed 250 feet and the coal seam is at least six feet in thickness). An area of over 770,000 acres of land are vulnerable to coal strip mining.

There are tremendous demands for western coal because of: (1) economics in strip mining operations; (2) low sulfur content (generalyy less than one percent); (3) moderate to low in ash content; (4) favorable BTU rating and; (5) the emphasis from federal government and utilities in attempting to satisfy the thirst for energy.

A portion of the Rosebud-McKay coal extends into the south portion of Treasure County on Sarpy Creek.

The Burlington Northern Railroad constructed a new railroad track up Sarpy Creek to serve the needs of the westmoreland strip coal mine in Big Horn County. The mine is located just a few miles south of the Treasure County line, but still in the Sarpy Creek basin. Presently all of the coal mined is shipped to points east and south as fuel for steam generation plants.

Land Ownership

The coal field lies within the land grant of odd numbered sections to Burlington Northern, Inc., who obtained possession of additional land in T. 1 and 2N., R. 39, 41, and 42 E. Burlington Northern has sold some of its surface and minerals to the Montana Power Company but has retained title to much of the surface in the Colstrip area. The Federal Government owns the coal in the even numbered sections except for Sec. 16 and 36 in each township, which are owned by the State of Montana.

Surface Features and Land Use

The Colstrip deposit is on the divide between Rosebud Creek to the east and Armells Creek. Most of the divide is gently rolling, but near the northern and eastern edges of the mapped area, it is relatively steep and deeply dissected where the clinker forms a resistant multicolored zone. Farther west, buttes and ridges are capped by clinker from the burning of higher coal beds. Armells Creek is an intermittent stream of gentle gradient, and flows only during periods of heavy precipitations and spring runoff. In the southern part of the mapped area, the valleys are steep sides where the Sawyer coal bed, which caps the ridges between the valleys of Coal Bank Creek, Miller Creek and Cooley Creek. To the west, the Little Wolf Mountains form a high divide between Armells Creek and Sarpy Creek.

Coal Beds

The principal coal beds in the Colstrip area are the Rosebud and the McKay beds. Thickness of the Rosebud is a maximum of 29 feet in Sec. 27, T. 1N, R. 41E, and averages about 25 feet throughout the area. In certain parts of the coal fields, the Rosebud contains a parting in the center or upper quarter of the coal bed, and in some areas, this parting attains a thickness of as much as two feet.

The McKay bed is 18 feet below the Rosebud in Sec. 13, T. 1N., R. 41E. Thickness of the McKay bed averages about 8 feet. Several coal beds above the Rosebud bed crop out in the Little Wolf Mountain; these include the Lee, Popham, Sawyer, Proctor, and Richard coal beds. The clinker formed as a result of the burning of the Sawyer bed, which is about 300 ft. above the Rosebud, caps buttes and ridge-tops throughout the area, (Scoria Hills).

Reserves in Colstrip deposit total 1,439,260,000 tons.

Another potential market for coal is in the production of liquid and gaseous fuels and chemicals. Due to rising consumption of natural gas, which is an exhaustible resource, the need to supplement this resource by synthetic high BTU gas from coal seems inevitable. It is predicted this need will arise in the 70's and 80's. To date, twenty areas have been designated in Eastern Montana where recoverable coal reserves and other factors are favorable for construction of at least one synthetic fuel plant. Four of these lie in Rosebud and Treasure Counties.

There is very little doubt that coal strippings will boom in the foreseeable future. Our immediate concern should be and is for the proper reclamation of the lands disturbed by these operations and maintenance of air quality if and when additional conversion facilities are constructed.

Coal Leases - The following list explains private and surface leases as of July 1974.

Treasure County	Acres
Exploration and Option for Coal Lease	9,680
Coal Leases	4,480
Surface Agreements	7,420
Combination Leases	6,100
Bentonite Leases	3,840
GRAND TOTAL	31,520

Westmoreland	
Coal Leases	640
Exploration with option for Coal Lease	9,680
Consolidated Coal Company	
Surface Agreements	7,420
Amax Coal Company	
Coal Leases	3,840
Hallet Minerals	
Bentonite	3,840
Combination Leases	
Amax-Coal Leases	
Consolidation-Surface Agreements	
Westmoreland- Exploration	2,140
Amax-Coal Leases	
Westmoreland- Exploration	3,120
Consolidation-Surface Agreements	
Westmoreland- Exploration	840

"Combination Leases" is simply our term used to describe the same tract of land on which two or more companies have made different types of agreements.

2. Sand and Gravel

Treasure County has large beds of sand and gravel. Most of these beds lie along and adjacent to the Yellowstone and Big Horn Rivers.

Treasure County road crews use sand and gravel from pits owned by the following land owners:

	Taken to date	Ac. to be mined
Archie Wilson	600 yds.	4.0
Grierson	10,000 yds.	2.0
Boyer	7000 yds.	2.0
Island	1000 yds.	2.0
Nansel	1000 yds.	2.0

There are no permits in Treasure County which produce sand and gravel from State owned land. All sand and gravel produced in Treasure County comes from privately owned land.

3. Bentonite

Bentonite is a material formed from the alternation of the volcanic ash, consists largely of the clay minerals, montmorillonite and beidellite. "Wyoming type" bentonites have the property of swelling to several times their own volume when wet. Beds are found in many parts of eastern Montana. It has numerous uses, among which are as an ingredient in oil-well drilling mud; bonding agent in molding sand; pelletizing taconite iron ore; cosmetics and candy manufacure and others. There are over 1,000 recognized uses of bentonite.

The Hallet Minerals Company of Duluth, Minnesota is the only company mining bentonite in Rosebud and Treasure Counties. There are numerous "pits" in the two counties from which the company extracts the material. the bentonite in this area is of a comparatively low quality and has a somewhat limited market, primarily in the taconite industry process.

At the present time (1974-75), the operation at Hallet Minerals at Vananda disturbs about 120 acres per year and has disturbed about 550 acres since they started mining. Their production is about 140,000 tons per year.

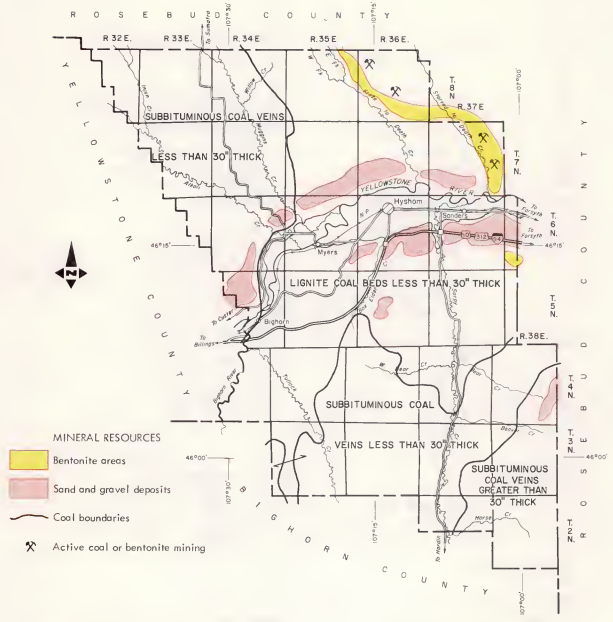
Reclamation of disturbed areas is a required consideration to be dealt with as in other types of mining. Hallet Minerals does reclaim the pits as the bentonite is mined from each pit. Reclamation is very difficult as the area where bentonite is found are usually raw and/or very slightly developed shales, clays and saline upland sites.

4. Agates

The Montanan moss agate can be found in gravel deposits in the middle and lower Yellowstone valleys. Agates are found in both the present stream bed and in the gravel terraces ten to fifteen miles either side of the Yellowstone drainage. They are modules of gray, trnslucent chalcedony, which when cut and polished, are seen to contain small manganese dendrites of pleasing appearance. Moss agates are popular recreation for amateur collectors and lapidaries, and are sold and traded in considerable numbers as semi-precious gem stones for use in jewelry and decoration. Their hardness requires a diamond-beaded blade for successful cutting.

Agates have increased in true and aesthetic value. They are becoming more scarce on the landscape. People were curious of these stones in earlier times, breaking the larger modules in searching for a possible unique design. The remains of good quality agate can be found on the gravel terraces.

Many rock hounds and collectors visit this area every year from all parts of the United States. A number of local people collect and process moss agates as a hobby.



LOCATION MAP

MINERAL RESOURCES

TREASURE COUNTY, MONTANA

OCTOBER 1976

5 0 5 10 MILES

SCALE 1:500,000

TRANSVERSE MERCATOR PROJECTION

SOURCE MATERIAL AMS TOPOGS NL13-4, NL13-7

Source:
Base map prepared by SCS, Portland Carto. Unit from AMS 1:250,000 series.
Thematic detail compiled by Montana State Staff.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE USDA SCS-PORTLAND OR 1976

M7-OL-2345I-8

POLLUTION

Treasure County shares an important part of the Big Sky country clean air.

Land and water pollution is becoming more evident with time. Therefore laws and regulations are being developed as one attempt in slowing down the rate of pollution.

Although in a rural setting, littering problems on the land are becoming critical. Increased littering of the throw-away materials indicates an attitude of people. The concern for our environment is being replaced with greed and self-satisfaction at the expense of a valuable resource- the beauty of the northern plains. Regulations will not stop littering. Recycling resources for a profit plus a changing attitude of people will help decrease littering on the land.

Water pollution in the forms of industrial and human waste, soil sediment and mineral development (particularly gravel, coal, and bentonite strip mining) is more easily identified and regulated than other types of pollution. The Environmental Protection Agency and Water Quality Bureau of the Department of Health are developing plans which will help evaluate the quality of water from point and non-point sources within every major drainageway. Treasure County is included in the current Southeastern Montana 208 study of water quality. Means of controlling the present sources of water pollution will be suggested to local people based on established standards. These standards can be obtained from the Water Quality Bureau, Department of Health, Helena, Montana.

At the present time, human and animal wastes and sediment discharge are the primary pollutants in Treasure County.

Open burning in rural areas can be accomplished by requesting a burning permit from the county fire marshall. General burning of any nature is not authorized in Hysham.

Reclamation

In 1973, landmark legislation was introduced and passed by the Montana State Legislature which regulates and controls surface mining activities in Montana. The Montana Strip Mining and Reclamation Act provides for the control of prospecting for and the strip mining of coal, clay phosphate rock, and uranium; and provides for permits, reclamation plan requirements, methods of operation, and penalties. Key provisions of the act include selective denial of strip mining permits, preplanning requirements for mining and reclamation, bonding up to $2000 per acre for land to be affected by strip mining, penalties

for noncompliance, denial of permits on lands having special or unique characteristics, including biological productivity, ecological fragility or importance, or other special significance. One of the most crucial provisions of the new law provides that after a strip mining operation has been backfilled, graded, topsoiled, and approved, the operator shall prepare the soil and plant such as legumes, grasses, shrubs, and trees on the land affected as are necessary to provide a suitable permanent diverse vegetative cover capable of:

(a) feeding and withstanding grazing pressure from a quantity and mixture of wildlife and livestock at least comparable to that which the land could have sustained prior to the operations;

(b) regenerating under the natural conditions prevailing at the site, including occasional drought, heavy snowfalls and strong winds;

(c) preventing soil erosion to the extent achieved prior to the operation.

The Montana Agricultural Experiment Station has done considerable reclamation research in the Colstrip area. Their task has been to develop procedures for establishing suitable permanent diverse vegetational cover on surface mined lands. Western Energy contributed financial support to the research project. New research projects are continually being initiated.

The Intermountain Research Station through Surface Environment and Mining Program of the U.S. Forest Service, is conducting reclamation research at Western Energy Company sites and Decker Coal Company in Big Horn County.

Native grass species and shrubs which are recommended by the State of Montana include Western Wheatgrass, Bluebunch Wheatgrass, Whitmar Wheatgrass, Slender Wheatgrass, Thickspike Wheatgrass, Green Needlegrass, Prairie Sandreedgrass, Blue Gramma Grass and Nuttall Saltbrush. Intorduced species include Nordan Crested Wheatgrass, Smooth Brome, Pubescent Wheatgrass, Alfalfa, Yellow Sweet Cover. Twenty-two to twenty-four pounds of seed per acre is seeded.

Tree and shrub species include; Buffaloberry, Caragana, Skunkbush, Sumac, Nuttall Saltbush, Cottonwood, Old Man Wormwood, Hansen Hedge Rose, American Plum, Ponderosa Pine, Juniper, Willow, Chokecherry, Russian Olive, Siberian Elm, Virginia Creeper, Honeysuckle, Sand Cherry, Lilac, Green Ash and American Elm.

GEOLOGY OF TREASURE COUNTY

The geologic history of Treasure County includes long periods of sedimentation and erosion. All of the rocks exposed at the surface are of sedimentary orgin. They range in age from Cretaceous (approximately 100 million years old) to recent (less than 20 thousand years old).

During the Cretaceous, thick sequences of marine sediments were deposited in a shallow sea which covered most of Eastern and Central Montana at that time. As the sea advanced, thick sequences of shales underlying the Judith River formation were deposited. As the sea retreated, the sandier sediments of the Judith River formation were deposited. The last advance of the sea laid down thick, shaley, marine deposits known as the Bearpaw Shale.

Following the Cretaceous, thick continental deposits of sandstones, clays, shales, and coal were deposited. These deposits make up the various members of the Lance and Fort Union formations.

Quaterary alluvium, ranging from coarse gravel to silt, is found on the bottom lands and lower terraces in the valleys of the Yellowstone River and its tributaries.

The sedimentary rocks in Treasure County have a regional dip of a few degrees to the northeast. This general trend is interrupted in the eastern part of the country by westerly dipping rocks from the flanks of the Porcupine uplift in neighboring Rosebud County. The simple structure and the stratigraphy in Treasure County are favorable for artesian pressure. Few surface flowing wells have been developed along the valley of the Yellowstone River.

The occurrence and distribution of ground water is directly related to the geology of the county. A description of the various geologic formations and the hydrologic characteristics of each are shown on the legend on the geology map.

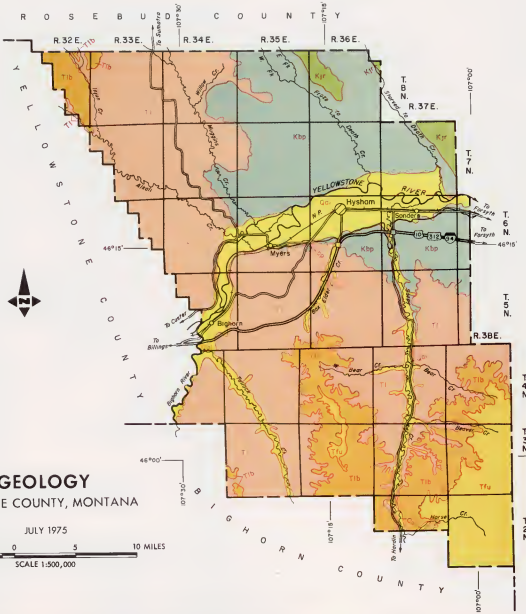
GEOLOGY

Age	Symbol	Approximate Thickness	Formation Name and Description	Hydrologic Characteristics
Quaternary	Qal	5-100'	Alluvium--Unconsolidated stream deposits of gravel, sand, silt, and clay. Thickest along major creeks and rivers.	Yields 10 to over 1000 gpm. Water quality suitable for all uses.
Tertiary	Tfu	up to 2000'	Fort Union formation-Beds of sandstone, clay, shale, and coal.	Yields 5-15 gpm. Water mineralized but suitable for livestock.
	Tlb	200-300'	Lebo shale--Member of Fort Union formation--Dark green shale with some sandstone and coal.	Not considered a good aquifer. Small yields of highly mineralized water in areas where static water level is near the surface.
	Tl	up to 1500'	Lance formation--Upper Tullock member is yellowish gray shale with sandstone and coal beds -1/4of Lance formation. Lower Hell Creek member is light greenish to yellowish shale with thick sandstones and little coal.	Yields 5-15 gpm. Water quality good for livestock and domestic use.
Upper Cretaceous	Kbp	up to 1000'	Bearpaw shale - dark bluish-gray marine shale.	Not considered a groundwater aquifer. Water encountered is highly mineralized - unsuitable for any use.
	Kjr	400'	Judith River formation - sandstone and shale.	Upper and lower sandstone considered fair groundwater aquifers. Yields range from 5-15 gpm. Water mineralized but suitable for livestock and limited domestic use.

Map and Explanation from:

Hall, George M., and Howard, C.S., 1929, Ground Water in Yellowstone and Treasure Counties, Montana, U.S. Geological Survey, Water Supply Paper 599.

Perry, Eugene S., 1935, Geology and Ground Water Resources of Southeastern Montana, Montana Bureau of Mines and Geology, Memoir 14.



GEOLOGY

TREASURE COUNTY, MONTANA

JULY 1975

5 0 5 10 MILES

SCALE 1:500,000

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

M7-OL-2345I-5

WILDLIFE

Big Game

Wildlife habitat throughout the county influences the type of game animals present. White-tailed deer are common along major drainages which either bound or run through the area. These are Yellowstone and Big Horn. A visible expansion away from the major rivers has been observed in recent years. The 1973 harvest figures show approximately 300 whitetails killed in the area, vs. 1,500 mule deer. Mule deer, while feeding extensively on the river and creek bottoms, seem to prefer the rough broken pine-juniper areas. Antelope which occupy the open sage grasslands are found in greatest abundance north of the Yellowstone River. Approximately 500 antelope were harvested in the county area during 1973.

Game Birds and Waterfowl

Approximately 500 pheasants, 1300 sharptails, 500 sage grouse and 100 Hungarian partridge were killed during 1973. Waterfowl use the Yellowstone River as a major stopover area during fall migrations. During peak migration periods, upwards of 10,000 Canadian geese may be found in the Yellowstone River area at any one time. Nesting on the Yellowstone by Canadian geese has increased to the point that a substantial resident flock has been built up. In recent years the Canadian goose has been expanding it's nesting territory to stock water reservoirs away from the river. Excellent opportunity exists to provide waterfowl habitat on the numerous good stock watering ponds, ie.; fencing, seeding, proper construction, etc.

Hunting Problems and Studies

Considerable time is being devoted to changing hunting conditions. Surveys are being conducted to determine the amount of land open, restricted, or closed entirely to hunting and then regulating quota accordingly. Fee hunting which is becoming established in several areas is having a direct affect on the ability to manage game. Changes in hunting regulations are being made to take the above problems into account and to reduce the impact of hunters on the landowner.

One of the immediate impacts of recent coal development on wildlife has been the large number of workers coming into the area who want to hunt. This has resulted in additional landowner problems and reduced bag limits on mule deer. Recent legislation has reduced the number of non-resident permits to be issued and has increased most license fees substantially.

Habitat evaluation which has long been important to wildlife management is undergoing extensive study. The final goal is to vegetatively map the 30,000 square miles of Southeast Montana and then correlate game populations with vegetation patterns to determine areas of optimum habitat for each game species. Initial work is being done with infra-red aerial photography to determine its value in mapping extensive areas.

Fisheries

Sport fishing in southeastern Montana is partially supported by a complex of ranch and farm ponds. These ponds vary in size from less than one acre to over 100 acres, but are generally from 5 to 20 acres in size. Paramount consideration in pond construction is livestock watering, with sport fishing and waterfowl production a secondary benefit. The larger rivers also provide excellent sport fishing opportunities for warm water species.

Northern pike, largemouth bass, walleye pike, are generally recommended for ranch ponds. However, if the pond is of exceptional quality, and the landowner prefer trout, his request is generally approved. Ponds are re-surveyed in subsequent years to evaluate the effectiveness of the stocking and fish management files are thus maintained and up-dated. The majority of the ponds are constructed in areas distant from the population centers and are therefore lightly used.

Fish Ponds, Treasure County

Only three ranch fish ponds are located within Treasure County. Warm water fish are found in two ponds and rainbow trout are stocked in the remaining reservior. All three ponds are located some distance from the population center (Hysham).

River Fishing

Two perennial rivers flow through and adjacent to Treasure County, the Yellowstone and Big Horn. Both are slow meadering streams typical of the eastern Montana plains and lower elevations. High sediment loads are common in the spring. Water temperatures up to 75-80 degrees are not uncommon in the summer. Both rivers provide excellent burbot (ling), sauger (pike) and sturgeon in the spring, with catfish in the summer.

Yellowstone River

The Yellowstone River flows through Treasure County providing sportfishing opportunities. Spawning populations of burbot (ling), sauger (pike) and shovelnose sturgeon also provide many hours of recreation each spring. Channel catfish are caught throughout the year.

The lower Big Horn River adjacent to Treasure County's west side provides good warm water fishing with an occassional trout being taken.

Fisheries' Problems and Potential

As human population numbers increase, and as our industrial society continues to provide the essentials for the "good life", more and more demands are being placed on outdoor recreational facilities. In Montana, fishing is an important participating outdoor recreational activity. Since water-based recreation is scarce in southeastern Montana, pond construction should be encouraged with the recreational potential emphasized.

Although pond construction should be encouraged in all areas, priorities should be assigned to pond sites closer to population centers. All ponds in Treasure County are located far from the Hysham area. Top priorities should be given to pond sites which are located within a 20 mile radius of the population centers. By placing the emphasis on pond construction within this circle, recreation potential and accessibility will be increased for not only the local anglers, but will be an added feature to attract tourists and keep them in the area.

Coal development in Rosebud County has and will continue to put added pressure on the fishery resources of the area. Increased population levels associated with the mining and processing of the coal brings in additional anglers with recreational needs. Reclamation of mined lands, which could include fish ponds, will seve to reclaim the disturbed land and will also provide additional sport fishing opportunities. However, the ponds must be commensurate with the surrounding lands. Box cuts filled with water are not acceptable fish ponds.

Land-use practices along the river flood plains to improve and enhance water quality should be encouraged. Practices which increase siltation should be strongly discouraged.

Fur Bearers

Fox, coyote, bobcat, coon, skunk,etc. have had an economic impact for the past two to three years. Bobcats have sold as high as $225/pelt, coyote $30-40/pelt. Other fur bearers in the area include muskrat, mink, and beaver.

Rare, unique and endangered species exist in the county. Bald and golden eagles, and prairie falcons are occasionally observed.

Many kinds of recreation exist in the county area. It is difficult to give ratings or priorities to recreational activities because what may be number one for one person or family may not appeal at all, or be low priority for others. Therefore, a wide variety of activities need to be available to the general public. Land ownership is as follows;

Treasure

State	37,304 A.
B.L.M.	11,694 A.
Private	580,702 A.

In this nearly 660,000 acre area there is a wide variety of recreation activities to choose from. However, it should be understood that access to these lands cannot be taken for granted. In most cases, the BLM and State lands lie in scattered tracts and are leased under long-term arrangement by livestock operators.

Generally speaking, water-bases recreation is high priority to nearly all persons. These include such sports as swimming, boating, water skiing, fishing, and waterfowl hunting. Our primary water resources are the Yellowstone River, Big Horn River, Yellowtail Reservoir, Fort Peck Reservoir, Tongue River Dam and many farm ponds stocked with fish and homes for waterfowl.

Private Lands

1. Historic sights, (Custer trail, Lamedeer, Battle of the Rosebud). Nearby are Custer Battlefield, Yellowtail Dam, Fort Peck Reservoir, Pompeys Pillars.

2. Snowmobiling, with permission and state laws regulating same.

3. Motorcycles, with permission and state laws.

4. Birdwatching, over 200 species of birds have been observed in the immediate areas in the past. Many species of birds are residents of the county and many other species pass through our vicinity to breeding and wintering areas.

5. Rockhounding, with land owners permission. Sometimes for a small fee. (agates, fossil, etc.)

6. Field Sports

   a. Tennis--Forsyth, Colstrip
   b. Baseball--Forsyth, Colstrip, Ashland, Rosebud, Hysham, (lighted fields at Forsyth and St. Labre Mission)
   c. Archery
   d. Trap shooting--Forsyth
   e. Golf--9 hole course with grass greens at Forsyth, plans for course at Colstrip.
   f. Football--High Schools--Forsyth, Rosebud, Hysham, St. Labre, Colstrip, (Lighted field at Forsyth and St. Labre)

7. Swimming--Forsyth, Hysham, Colstrip and new pool planned.

8. Outdoor Theater--Forsyth

9. Indoor Activities

   a. Bowling--6 lanes Forsyth, new lanes are planned at Colstrip.
   b. Basketball, volleyball, etc., available at gymnasiums in Forsyth, Rosebud, Colstrip, Lamedeer, St. Labre Mission and Hysham.
   c. Duplicate Bridge Club
   d. Movie Theaters--Forsyth, Ashland, and Colstrip

Many people enjoy pleasure driving. There is a wide variety of scenery in the county including sandstone formations, pine covered hills or mountains up to 4000 feet, red scorio hills, badlands, rolling prairies, farming activities, livestock and wildlife.

TRANSPORTATION

Railraod service in Treasure County is provided by the Burlington Northern Railroad. This service consists of freight, sugar beets and coal unit train shipments.

The Burlington Northern Railroad has doubled their manpower during 1973 and 1974 due to the increase in coal exports. Additional track at the Forsyth yard was added during 1975 and a by-pass track is due for completion during the summer of 1975 between Forsyth and Colstrip. A new spur line to the Westmoreland Mine on Sarpy Creek was completed in 1974. A central trail control system was installed in the Hysham area for more sufficient traffic control.

The Milwaukee Railroad does not have any scheduled stops between Miles City and Roundup. It does ship bentonite from the mine at Vananda and hauls water to the community of Ingomar.

Bus service is provide by Greyhound, with scheduled stops three times per day at Hysham for east and west bound points.

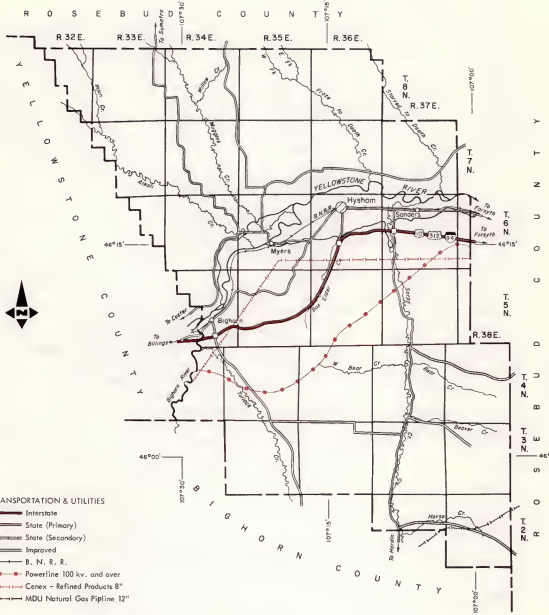
Interstate 94 traverses Treasure County with only a small amount remaining two-lane. Construction is well along on 17 miles of two lane in Treasure County, an over-pass at Sarpy Creek, and several other projects. Specific routes of highways and county roads are noted on the Transportation and Utilities Map.

COMMUNICATIONS

The area of public awareness is one in which Treasure County needs to devote more attention. A basic requirement for success in any rural development program is the ability of those with help to communicate with those in need of help. At the present time there is a newspaper being printed each week in the county. A 5000 watt radio station has been completed in Forsyth. There are no local TV stations. Two channels are picked up in Treasure County directly from the TV stations. There are plans now in the making to bring in one more TV station by use of a translator to Treasure County. Three radio stations at Billings and one each from Hardin, Miles City and Forsyth are readily picked up in the area. The Extension Service and local ASCS office, from time to time send out newsletters to farm and ranch people on current items of interest.

In the field of personal communications, almost all of the county has telephone service available.

There are also some two-way radio systems in the county. Many people have C.B. units which can be an effective method of communication.



LOCATION MAP

TRANSPORTATION & UTILITIES

TREASURE COUNTY

MONTANA

MAY 1975

5 0 5 10 MILES

SCALE 1:500,000

TRANSVERSE MERCATOR PROJECTION

SOURCE MATERIAL: AMS TOPOGS NL13-4, NL13-7

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE 6826-SCS PORTLAND, OREG. 1975

M7-OL-23451-3

SOCIO-ECONOMIC

People

Most of the people of Treasure County have been rural traditionalists who value credibility, trust, honesty, and a way of life that is shaped by sparsely populated land and an agricultural economy. Ranch families and residents of the county's small towns usually have deep roots here and a tradition of making their own decisions and controlling their own destinies (except for the dictates of such uncertainties as weather) the way they feel that the area's pioneers did. The recent acceleration of industrial development of the county's coal resources has brought an influx of people from more urban areas, and their numbers, rate of arrival and purpose are beginning to make sweeping changes in the lives of residents of Treasure County. People are generally resisting this type of change.

It is not proper to label very many people in the county as simply "pro" or "anti" development. Recent research* has revealed that most residents are deeply concerned about the effects of coal development decisions on such valued resources as recreational land, air and water as well as on the aesthetics of the area and Western way of life. Even though several Treasure County ranchers have leased to coal companies for various reasons, they generally are fearful of the uncertainties of the effect of coal development on their agricultural futures and on their fragile social system. Townspeople are being faced with a housing shortage and the need to improve or expand water and sewage facilities and other services. In a recent survey** both rural residents and townspeople said that the proposed additional coal-related construction should be delayed until the affects of the current development are known. Only 8.9 percent of respondents in the survey sample, which represented temporary construction workers no less than established locals, disagreed.

*Studies directed by Raymond Gold of the University of Montana involved extensive interviewing and contacts with Rosebud County residents from Oct. 1973 through May 1975.

**During the summer of 1974 a questionaire was administered to a randomly selected representative sample of the residents of Rosebud County south of the Yellowstone River by a study team under the direction of Gordan Browder and Ed Bohart of the University of Montana.

Pressures from these rapid changes have made it difficult to continue to make individual decisions about the use of such resources as privately owned lands, that were formerly considered no on else's business; but in the previously cited survey most Treasure County residents indicated that planning and decisions about resource management should still be conducted and controlled by the local people with state "professionals" also involved.

Most residents can accept some mining and exporting of coal but do not want large-scale industrialization. Less than one-fourth of the respondents in the survey stated that further development should not be restricted. More than 75 percent disagreed with the statement, "Decisions about coal-related development should be made on economic grounds only; consideration need not be given to effects on life styles and values."

In short, the majority of people are deeply concerned about the balance between social costs of industrial growth and the attendant economic gains, and they want to have a significant and continuing voice in plans and decisions affecting further development of the county's resources.

To the businessman, the growth to date could be classified as healthy for the community. Officials of local units of government (city and county) generally favor the rate of growth and development experienced. However, many people are more sensitive to the economic gains rather than the less obvious social costs.

Taxes

For many centuries people have been paying a fee for the privilege of owning property. This fee or contribution is based upon the value of certain classes of property. These fees paid for supporting government at all levels is compulsory, thus we have taxation .

There are many different taxing systems in the United States. Montana has no sales tax, nor does Treasure County. Montana does impose an income tax, as does the Federal Government. Treasure County levies taxes on almost all property, based on guidelines furnished by the Montana Department of Revenue. The local assessor and appraiser place a value on real estate and personal property based upon these guidelines. These values are generally in line with specific classes of property.

Following is a list for each class of property and the rate at which it is taxed following assessment.

Class	Items Included	Taxable Rates %
1	Net proceeds and royalties, ie. oil, coal, uranium	100
2	Farm equipment, airplanes, boats, campers, trailers, automobiles	20
3	Livestock, electric signs, gas pumps, libraries	33 1/3
4	Real estate, mining machinery, drilling rigs, oil equipment, mobile homes, local utilities	30
5 & 7	New industrial property, co-op bldgs. & lines, bank surplus, air pollution control facilities, business inventories	7
10	Utilities, lines, tracks, dental, medical, x-ray, coin-op machines, communication equipment	40

After an advalorem value (or proportion of true value) is assessed against the property, each school district in the county can calculate the number of mills required to generate the needed revenue.

The following formula is used in computing the amount of tax to be paid.

Assessed value X taxable rate X mill levy = amount of tax due County Treasurer.

Example--1 acre land $50 x 30% x 167 mills = $2.51.

At the present time the taxable value of Treasure County is about $3,500,000. One mill will raise 3,500 dollars in Treasure County. The maximum mill levies for certain government functions are based on the class and city and county designated by law. City designations are on population, county designations are on taxable values.

Taxes increase as people demand additional services for an area. We continue to improve the standard of living and a more healthy and safe atmosphere in which to raise families. With this, increased funding is required in developing standards which have been promulgated by our laws and technology.

People may pay taxes under protest and until the conflict has been resolved, the protest funds can not be budgeted by local government.

A comparison of mill levies in Treasure County for 1973 and 1974 is as follows:

	1973	1974
General Fund	18.00	26.00
County Road (Exclusive of Hysham)	12.00	15.00
Bridge Fund	3.50	3.50
Stock Funds (All)	22.00	22.00
General School Fund	57.79	54.35
District School Fund	7.64	9.35
High School Fund	5.90	5.51
Municipal	87.10	84.50

SECTION III

DISTRICT PRIORITIES, GOALS & OBJECTIVES

DISTRICTS PRIORITIES, POLICIES, GOALS & OBJECTIVES

PRIORITIES

The District will concentrate their efforts to get treatment on the land to conserve water, prevent erosion and prevent or reduce the pollution of water, land, and air. The second priority will be to assit the local rangeland committee in the objectives and goals of the Custer County Rangeland Resource Committee Plan.

POLICIES

The Supervisors recognize and fully accept their responsibilities for carrying out the affairs of the District. They will hold regular meetings and conduct business in accordance with the objectives and within the law.

Specific District policy, goals and objectives are as follows:

I. PLANNING & DEVELOPMENT

The Conservation District can contribute significantly to the effectiveness of a resource planning program. The data on the natural resources of the district can help in determining the effects of both urban and agricultural uses on these resources. In resource planning and development, the apparent problems often are not the real problems, but rather symptoms of several related problems. Each must be identified and dealt with in a manner that will treat the symptom and effect a cure. In this section the problems relate to each major resource, and the objectives and goals which follow lists ways in which the District will attempt to solve these problems.

Goal: Make full use of soil survey in land use decisions.

Have conservation plans on 85% of the operating units in district under conservation plans by 1985.

Work with the county planning board in making land use decisions for the county.

Objectives: Carry on an information program for all segments of the population on the value of a soil survey.

Provide to the planning board, inventory data on natural resources for making sound planning decisions.

Coordinate and make available to planning boards information of agencies.

Develop committee structures of associate supervisors, civic groups, and other interested persons to forward the efforts of the district in all resource activities.

District supervisors will encourage the development of conservation plans to neighbor farmers and ranchers.

Make use of other programs, such as the Great Plains Conservation Program to encourage the development of Conservation Plans.

Establish planning priorities to reflect the treatment needs of the land.

II. CROPLAND

The need for increased crop production will continue as population numbers continue to grow.

Goal: Establish an information program to continually keep farmers informed of means to improve production while protecting the cropland resource.

Cooperate with County Commissioners to establish an effective county-wide weed control program.

To fully develop waterspreading systems to increase hay production.

Improve irrigation water management on all irrigated lands.

Increase the use of the soil survey to determine new land suitable to be cropped or presently cropped land which should be seeded back to permanent vegetation.

Decrease rodent and insect damage in cropland.

Objectives: Develop an information program to point out the need and benefits of converting class six land to permanent cover.

Recommend that high priorities for cost-share programs be placed on conversion of class six land to permanent cover.

Encourage the installation of measuring devices to better enable operator to determine amount of water applied.

Encourage all operators to use soil tests to determine fertilizer needs.

Meet with the county officials and weed control board to review the weed program.

Organize tours and demonstrations to point out value of irrigation water management.

Encourage the establishment of conservation practices on existing cropland to enchance the natural beauty and prevent the degradation of the environment.

Encourage cooperators to take advantage of programs & practices for the control of rodents and insects on cropland.

III. RANGE AND PASTURE

Improve the rangeland resources as outlined in the Montana Rangeland Program.

Goal: As outlined in the Montana Rangeland Program.

Objectives: Assist in the formation of an active rangeland program in Treasure County.

Participate with the Society for Range Management Old West Regional Commission Program in promoting proper range use.

Meet and review research need with research agencies and individuals.

Encourage the establishment of tame pastures to supplement early spring and late fall grazing.

Encourage the seeding back of marginal cropland to grass species which will supplement existing grazing systems.

Encourage the use of rangeland improvement practices to improve rangeland condition and income.

Encourage the formation of a weed control program on rangeland.

Encourage sagebrush control to improve rangeland condition.

IV. OTHER LANDS

Other land in the District consists primarily of roads, farmsteads, rural schools, churches, cemeteries, etc. These areas, if not properly treated, become sources of sediment or areas for noxious weed infestations.

Goal: To have a development plan on all such areas by 1985.

Objectives: Meet with the county commissioners and highway personnel to discuss proposed construction and conservation measures to be installed to protect the soil resource.

Supply necessary technical assistance to see the correct grass species are seeded on all disturbed areas.

Encourage the planning of water impoundment structures, where feasible, with new road construction.

Encourage the planting of trees to enhance the beauty and reduce noise pollution where possible.

Encourage the Weed District to actively control noxious weeds on all county and state roads.

Encourage the planting of farmstead windbreaks to enhance the natural beauty, and reduce noise and wind around farmstead building and feeding areas.

V. WATER RESOURCES

To provide broad direction and coordination in maintaining water quality while attaining maximum beneficial use of the surface and ground water resources.

Goal: Review water development projects annually to assure a proper balance of available water and development within each drainage basin.

Objectives: Encourage land management practices that will reduce runoff and stabilize highly eradicable soils.

Assist the Department of Natural Resources in developing an overall water use plan.

Meet regularly with the Irrigation Districts to review needs and problems.

Gather data as requested and as time permits for the State Water Plan.

Encourage land owners to apply for water permits for beneficial use.

Encourage operators to gather supporting documentation for existing beneficial water use.

Encourage a complete underground water study in the District.

Encourage inter-agency cooperation in the planning, development, and improving irrigation projects.

VI. MINERALS

Should mineral exploration or associated activities occur, which alter or destroy the surface of the land, the land must be treated and reclaimed for planned future use.

Goal: Cooperate with the Montana Department of Natural Resources and other agencies in determining potential mining and reclamation procedures.

Objectives: Encourage county commissioners to develop a policy statement on mineral development.

Use the soil survey as a tool to determine soils to be used in the reclamation process.

Develop guidelines for seeding of disturbed areas.

Encourage affected producers to form land owner associations when dealing with potential developers.

VII. RECREATIONAL & HISTORICAL AREAS

Appraising the potential for recreation is an essential step in planning to meet the recreational needs of the community.

Goal: Provide technical assistance to individuals & groups interested in developing recreational & historical areas in the county.

Objectives: Assist in development by providing soil information and interpretation so sound land uses can be made.

Encourage a better liaison between various agencies during the early planning stages of road designs in order that more consideration can be given in the development of recreational facilities.

VIII. HUMAN & ECONOMIC RESOURCES

A number of social and economic problems are related to the population of the area. Many are deep-seated and historical; others are extensions of social changes affecting the state and nation.

Goals: To decrease the out-migration of young people.

Update health facility care in the county by cooperating with organizations already working on these problems.

Provide adequate additional solid waste disposal facilities in the county.

Objectives: Encourage an on-going program to provide facilities and education for training a labor force to meet the needs of agriculture.

Promote the construction of private and community solid waste disposal sites through local, state, and federal financing.

Encourage changes in the inheritance laws to allow transfer without undue hardship.

Continue to encourage information and training programs that will help keep farmers and ranchers informed on new technological skills, marketing facilities, and new ot improved plant species.

Provide technical assistance in the location, etc., of solid waste disposal pits.

IX. FISH & WILDLIFE

With the increased growth of outdoor oriented recreation, fish and wildlife will become an even more important consideration in the overall resource development program of the District.

Goal: Encourage the use of conservation practices as a way to provide maximum benefits to wildlife.

Objectives: Encourage the Fish & Game Department to cooperate more closely with operators in the county.

Encourage the development of wildlife habitat for game birds during the planning process.

Sponsor programs and educational material to promote better relationships between sportsmen and landowners.

Encourage the development of a good rodent and predator control program.

X. ENVIRONMENTAL PROTECTION

A healthy environment is essential to a healthy prosperous state and nation.

Goal: To maintain the environment in as good or better condition than it is at present.

Objectives: Work with state and federal agencies in the control or reduction of pollutants in all waterways without causing hardships to farmers and ranchers.

Develop guidelines and practices to prevent sediment pollution in the District.

Encourage land use practices to prevent air pollution.

Become involved in 208 studies to assure local input is provided.

Work directly with EPA on air and water quality investigations.

XI. ENERGY

Recognizing energy problems and opportunities for wise use and development.

Goal: To eliminate unnecessary and wasteful uses of energy supplies.

Objectives: Establish as educational program to acquaint all people in the District with the need for energy conservation.

Encourage the use of energy saving farming practices.(i.e. minimum tillage, no tillage, etc.

XII. LEGISLATIVE

Conservation Districts located in counties with low taxable evaluation are continually faced with financial problems.

Goal: To get improved funding for districts.

Objectives: Encourage the State Association of Conservation Districts to investigate new sources of funding for Conservation Districts.

RESOLUTION OF ADOPTION

On September 2, 1976 at Hysham, Montana, at a regular meeting of the Board of Supervisors, consisting of Chairman Howard Hadden, Vice Chairman Robert Criswell, Treasurer Bob DeCock, Secretary Rick Johnson, and Supervisors Myles Van Hemelryck and Ralph Ickes, did meet and review the prepared Treasure County Conservation District Longe Range Plan and after such review did mutually agree and resolve that such district plan be adopted.

Signed this 2nd day of September, 1976.

Supervisors:

Howard Hadden
Chairman

Robert Criswell
Vice Chairman

Bob DeCock
Treasurer

Rick Johnson
Secretary

R C Ickes
Supervisor

Myles Van Hemelryck
Supervisor